AP35

SERVICE MANUAL

GXV336

Stereo Power Amplifier

Gelhard®

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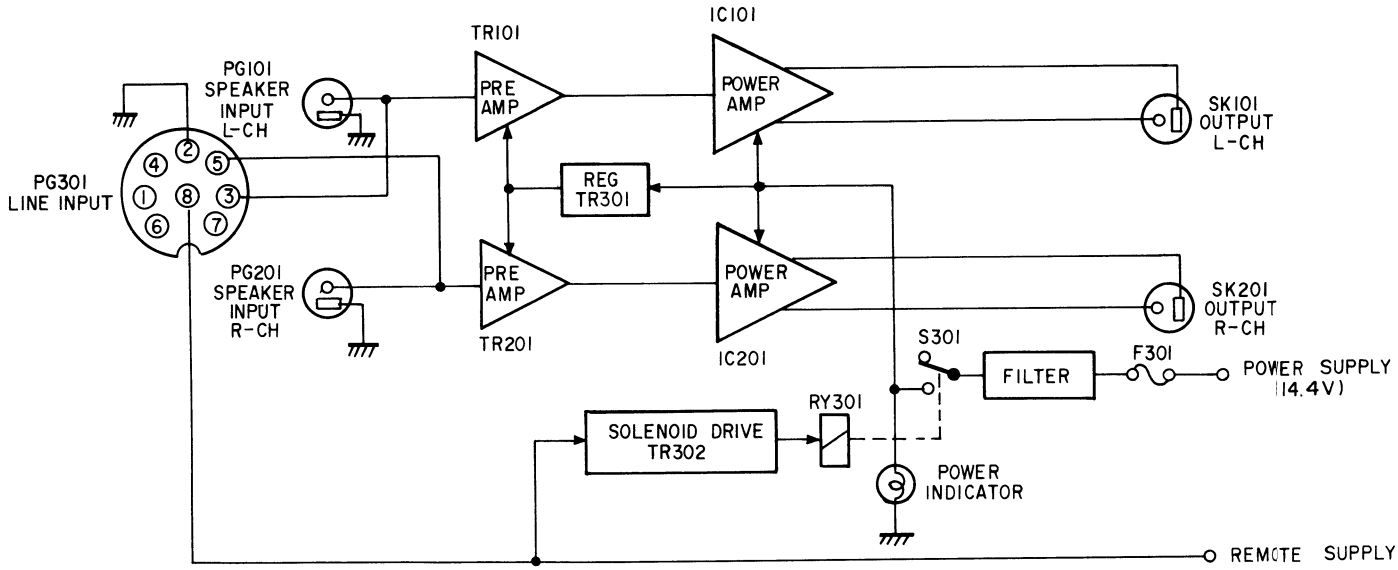
SPECIFICATION

Description		Nominal Spec.	Limit Spec.
Output Power 10% Distortion at 1 kHz		20W x 2	18W x 2
Output Power 0.5% Distortion at 1 kHz		12W x 2	10W x 2
Frequency Response (±1.5 dB)		20 Hz ~ 30 kHz	40 Hz ~ 16 kHz
Signal-to-Noise Ratio (Weighted CCIR/A)		68 dB (76 dB)	62 dB (70 dB)
Input Sensitivity Output Power at (20W x 2)	Speaker Input	3V	3V ± 1.5 dB
	Line Input	600 mV	600 mV ± 1.5 dB
Input Impedance	Speaker Input	1 kΩ	900 Ω
	Line Input	10 kΩ	9 kΩ
Speaker Impedance		4 Ω	
Power Source		DC 14.4V (11 ~ 16V) Negative Ground.	
Current Drain at (20W x 2)		5A	6A
Dimensions		1" x 6" x 4.7" (25mm x 150mm x 120mm) HWD	
Weight			

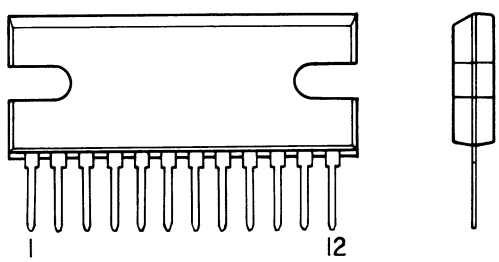
NOTE: *Nominal Specs represent the design specs, all units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.*

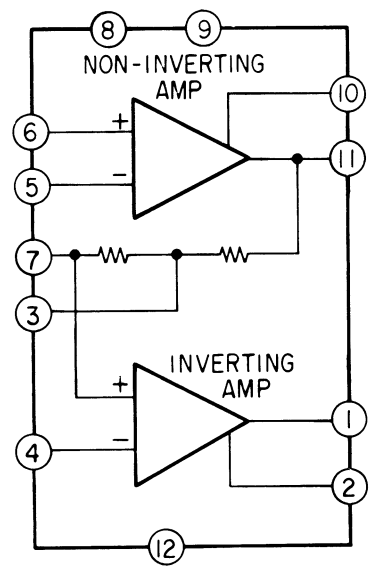
BLOCK DIAGRAM



SEMICONDUCTORS

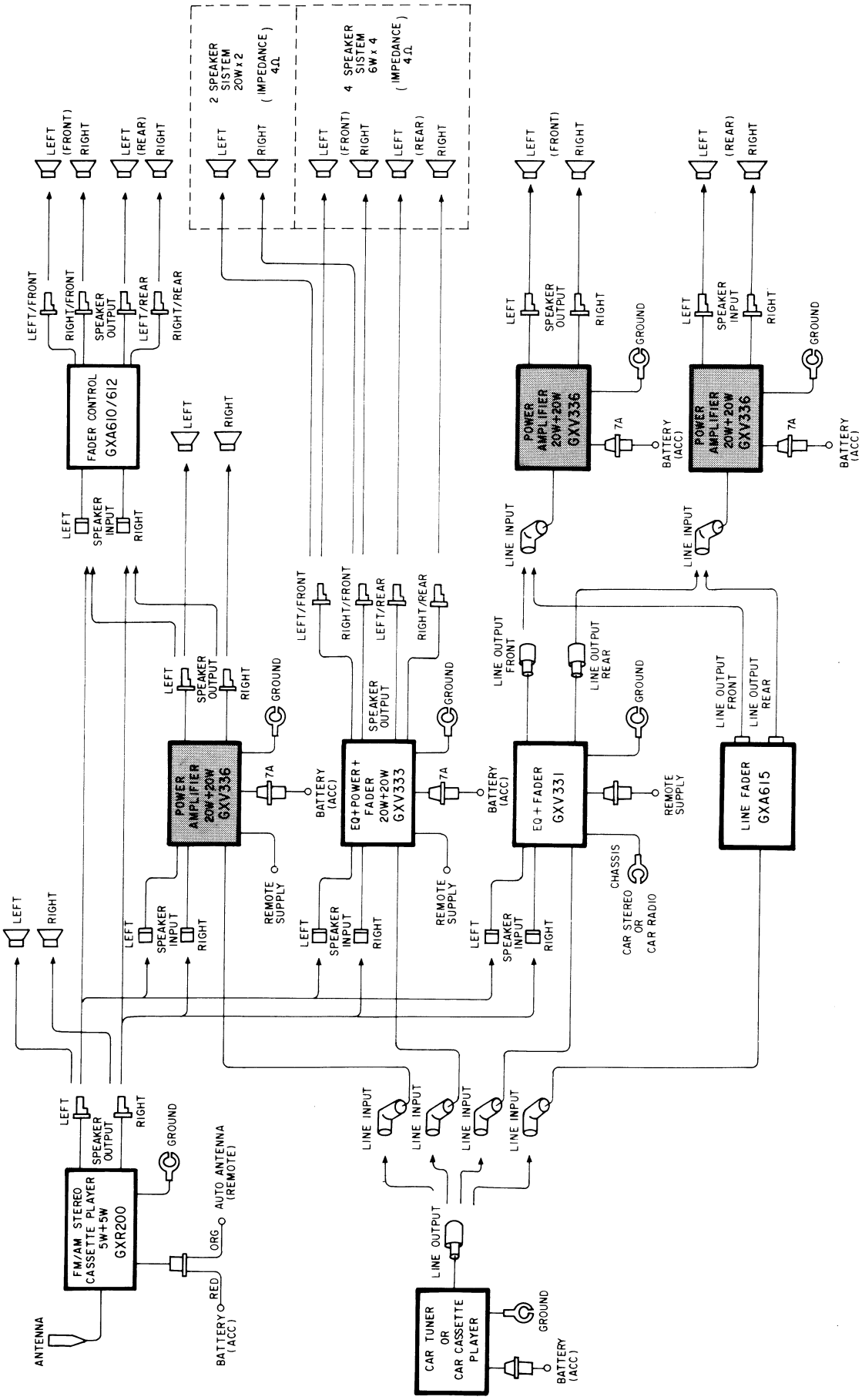
μPC1230H2



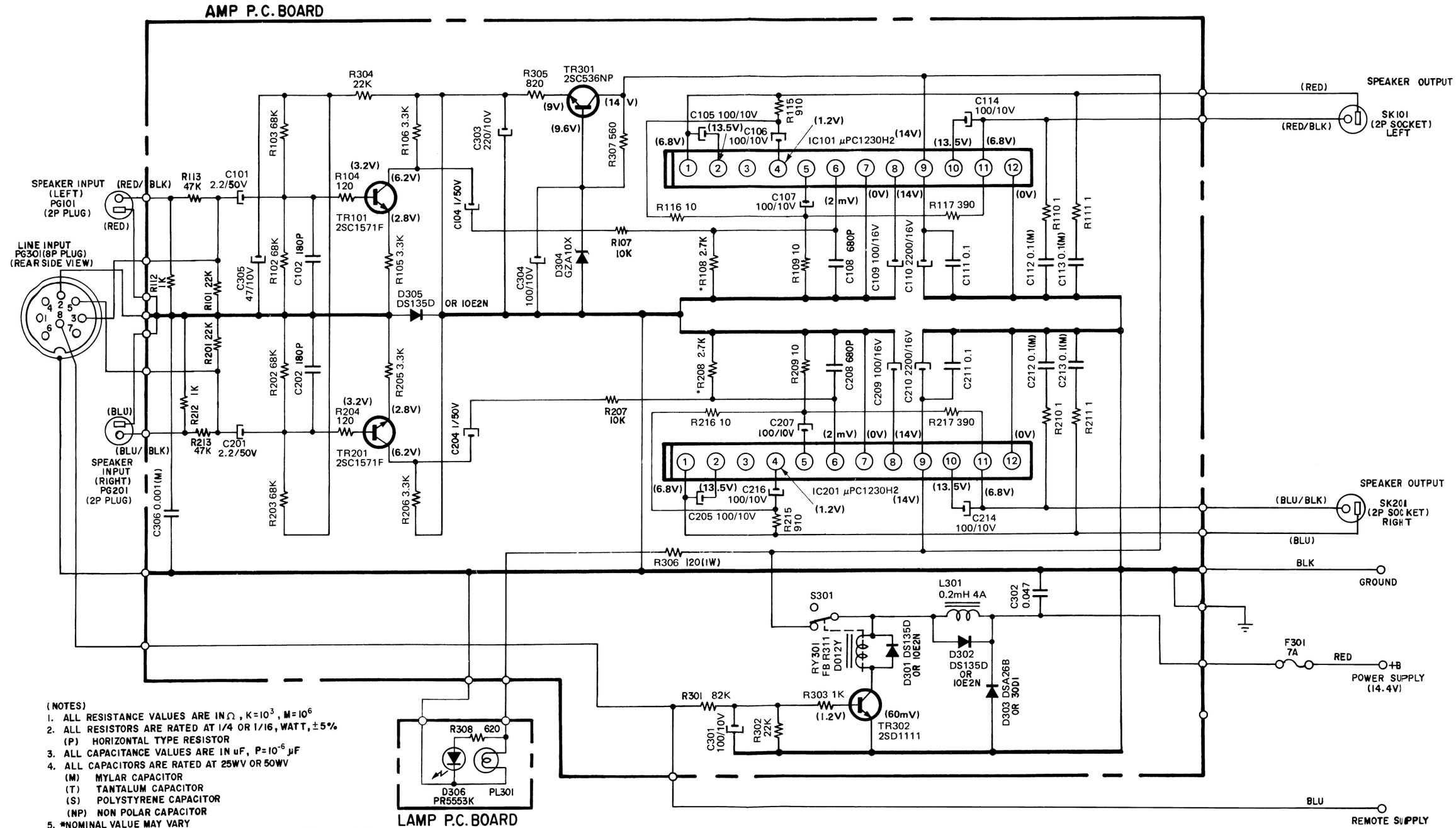


TR101, 201	2SC1571F
TR301	2SC536NP
TR302	2SD1111

CONNECTION DIAGRAM



SCHEMATIC DIAGRAM

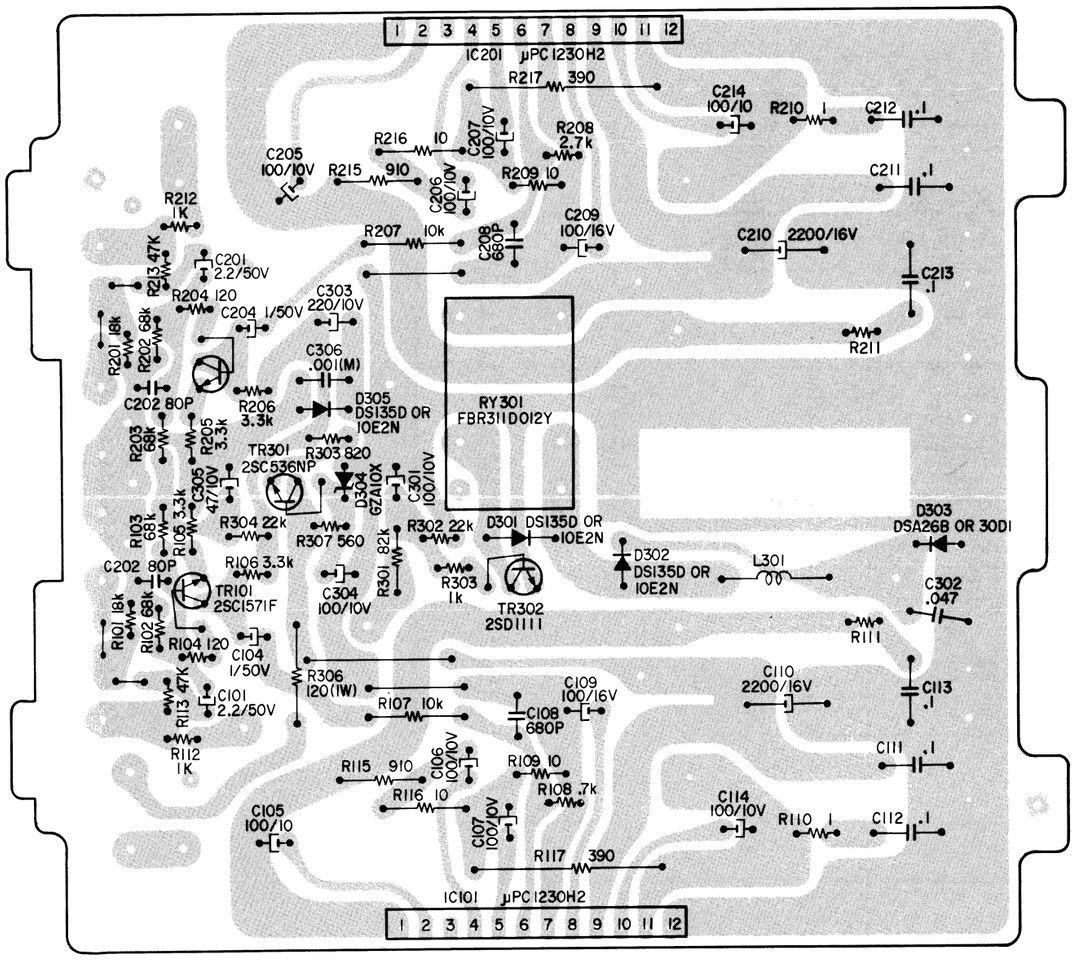


(NOTES)

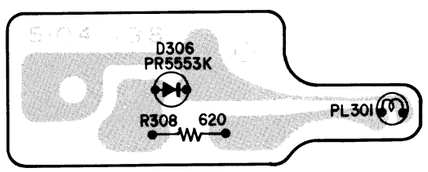
1. ALL RESISTANCE VALUES ARE IN Ω , K=10^3 , M=10^6
2. ALL RESISTORS ARE RATED AT 1/4 OR 1/16, WATT, ±5%
   (P) HORIZONTAL TYPE RESISTOR
3. ALL CAPACITANCE VALUES ARE IN uF, P=10^{-6} μF
4. ALL CAPACITORS ARE RATED AT 25WV OR 50WV
   (M) MYLAR CAPACITOR
   (T) TANTALUM CAPACITOR
   (S) POLYSTYRENE CAPACITOR
   (NP) NON POLAR CAPACITOR
5. *NOMINAL VALUE MAY VARY
6. ALL VOLTATGES IS MEASURED AT NO SIGNAL INPUT CONDITION

P. C. BOARDS

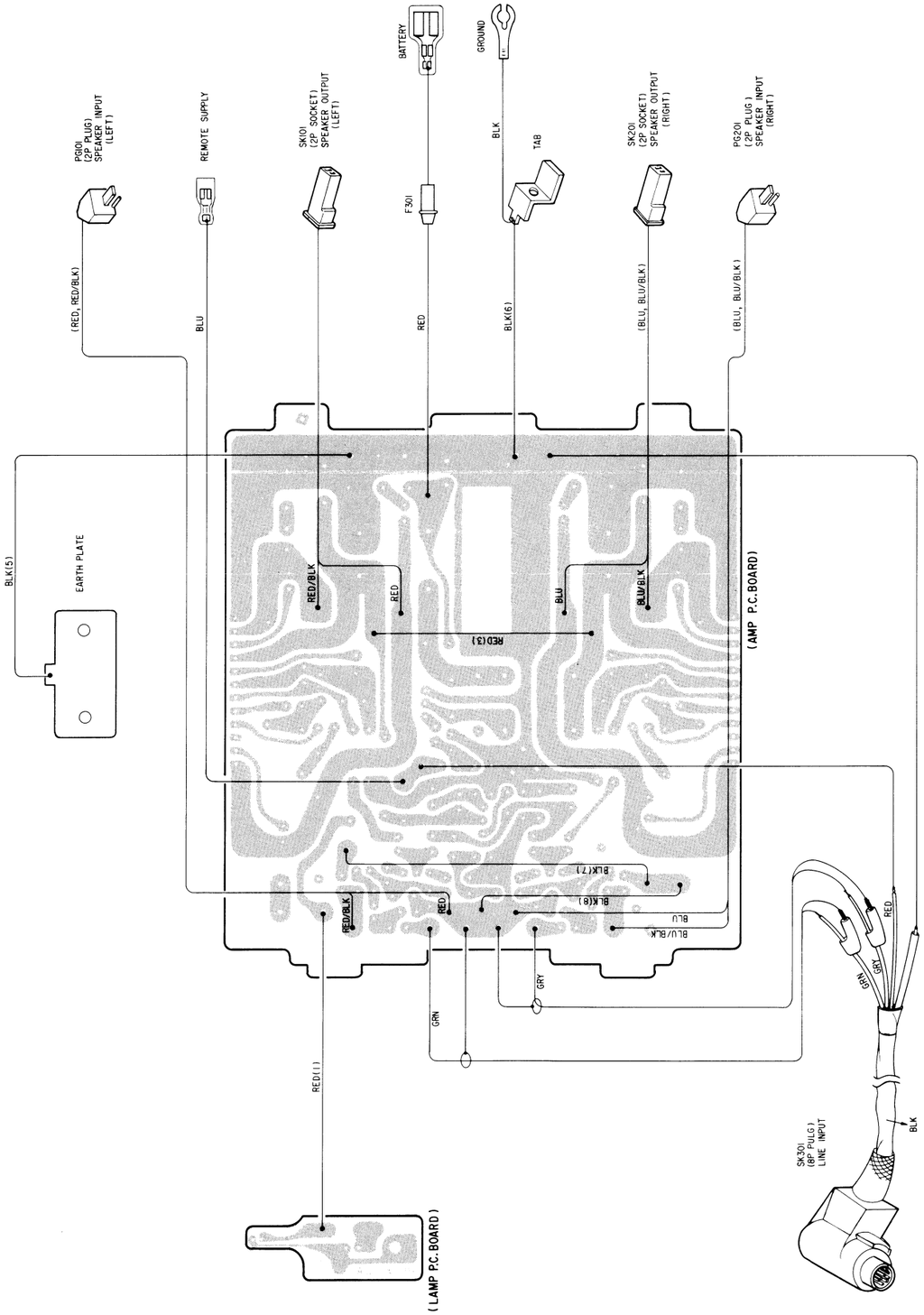
AMP. P.C. BOARD



LAMP P.C. BOARD



WIRING DIAGRAM



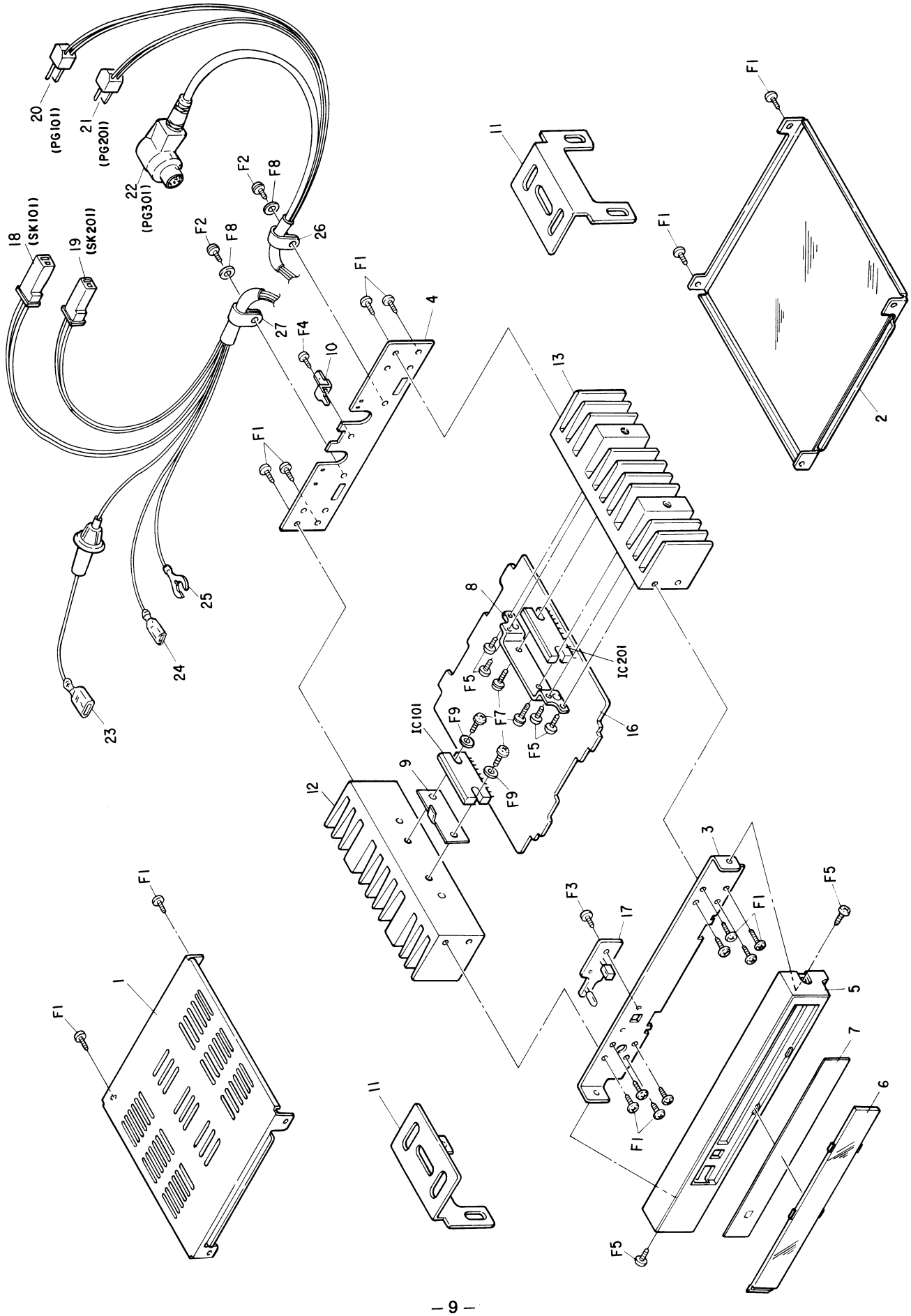
PARTS LIST

ELECTRICAL PARTS LIST

SEMICONDUCTORS				
Ref. No.	Description		MFR's Part Number	Remarks
IC101	IC	μPC1230H2	149-5063-002	
IC201	IC	μPC1230H2	149-5063-002	
D301	Diode	DS135D or 10E2N	148-5034-002 (148-5146-002)	
D302	Diode	DS135D or 10E2N	148-5034-002 (148-5146-002)	
D303	Diode	DSA26B or 30D1	148-5111-001 (148-5149-001)	
D304	Zener Diode	GZA10X	148-5113-018	
D305	Diode	DS135D or 10E2N	148-5034-002 (148-5146-002)	
D306	LED	PR5553K	148-5158-001	
TR101	Transistor	2SC1571(F)	148-5122-001	
TR201	Transistor	2SC1571(F)	148-5122-001	
TR301	Transistor	2SC536NP(F)	148-5017-005	
TR302	Transistor	2SD1111	148-5093-001	

RESISTORS					
Ref. No.	Description				MFR's Part Number	Remarks
R101	Carbon	22k ohm	1/4W	±5%	142-5043-223	
R102	Carbon	68k ohm	1/4W	±5%	142-5043-683	
R103	Carbon	68k ohm	1/4W	±5%	142-5043-683	
R104	Carbon	120 ohm	1/4W	±5%	142-5043-121	
R105	Carbon	3.3k ohm	1/4W	±5%	142-5043-332	
R106	Carbon	3.3k ohm	1/4W	±5%	142-5043-332	
R107	Carbon	10k ohm	1/4W	±5%	142-5043-103	
R108	Carbon	2.7k ohm	1/4W	±5%	142-5043-272	
R109	Carbon	10 ohm	1/4W	±5%	142-5044-100	
R110	Carbon	1 ohm	1/4W	±5%	142-5043-109	
R111	Carbon	1 ohm	1/4W	±5%	142-5043-109	
R112	Carbon	1k ohm	1/4W	±5%	142-5043-102	
R113	Carbon	47k ohm	1/4W	±5%	142-5043-473	
R114	–					
R115	Carbon	910 ohm	1/4W	±5%	142-5044-911	
R116	Carbon	10 ohm	1/4W	±5%	142-5044-100	
R117	Carbon	390 ohm	1/4W	±5%	142-5044-391	
R201	Carbon	22k ohm	1/4W	±5%	142-5043-223	
R202	Carbon	68k ohm	1/4W	±5%	142-5043-683	
R203	Carbon	68k ohm	1/4W	±5%	142-5043-683	
R204	Carbon	120 ohm	1/4W	±5%	142-5043-121	
R205	Carbon	3.3k ohm	1/4W	±5%	142-5043-332	
R206	Carbon	3.3k ohm	1/4W	±5%	142-5043-332	
R207	Carbon	10k ohm	1/4W	±5%	142-5043-103	
R208	Carbon	2.7k ohm	1/4W	±5%	142-5043-272	
R209	Carbon	10 ohm	1/4W	±5%	142-5044-100	
R210	Carbon	1 ohm	1/4W	±5%	142-5043-109	
R211	Carbon	1 ohm	1/4W	±5%	142-5043-109	
R212	Carbon	1k ohm	1/4W	±5%	142-5043-102	

EXPLODED VIEW



Ref. No.	Description				MFR's Part Number	Remarks
R213	Carbon	47k ohm	1/4W	±5%	142-5043-473	
R214	–					
R215	Carbon	910 ohm	1/4W	±5%	142-5044-911	
R216	Carbon	10 ohm	1/4W	±5%	142-5044-100	
R217	Carbon	390 ohm	1/4W	±5%	142-5044-391	
R301	Carbon	82k ohm	1/4W	±5%	142-5043-823	
R302	Carbon	22k ohm	1/4W	±5%	142-5043-223	
R303	Carbon	1k ohm	1/4W	±5%	142-5043-102	
R304	Carbon	22k ohm	1/4W	±5%	142-5043-223	
R305	Carbon	820 ohm	1/4W	±5%	142-5043-821	
R306	Metal Film	120 ohm	1W	±5%	142-5007-121	
R307	Carbon	560 ohm	1/4W	±5%	142-5043-561	
R308	Carbon	620 ohm	1/4W	±5%	142-5044-621	

CAPACITORS

Ref. No.	Description				MFR's Part Number	Remarks
C101	Non Pole Aluminum	2.2μF	25WV	±20%	116-5049-225	
C102	Ceramic	180pF	50WV	±10%	116-5043-181	
C103	–					
C104	Aluminum	1μF	50WV	±20%	116-5185-105	
C105	Aluminum	100μF	10WV	±20%	116-5182-107	
C106	Aluminum	100μF	10WV	±20%	116-5182-107	
C107	Aluminum	100μF	10WV	±20%	116-5182-107	
C108	Ceramic	680pF	50WV	±10%	116-5043-681	
C109	Aluminum	100μF	16WV	±20%	116-5183-107	
C110	Aluminum	2200μF	16WV	±20%	116-1001-228	
C111	Mylar	0.1μF	50WV	±10%	116-5149-104	
C112	Mylar	0.1μF	50WV	±10%	116-5149-104	
C113	Mylar	0.1μF	50WV	±10%	116-5149-104	
C114	Aluminum	100μF	10WV	±20%	116-5182-107	
C201	Non Pole Aluminum	2.2μF	25WV	±20%	116-5049-225	
C202	Ceramic	180pF	50WV	±10%	116-5043-181	
C203	–					
C204	Aluminum	1μF	50WV	±20%	116-5185-105	
C205	Aluminum	100μF	10WV	±20%	116-5182-107	
C206	Aluminum	100μF	10WV	±20%	116-5182-107	
C207	Aluminum	100μF	10WV	±20%	116-5182-107	
C208	Ceramic	680pF	50WV	±10%	116-5043-681	
C209	Aluminum	100μF	16WV	±20%	116-5183-107	
C210	Aluminum	2200μF	16WV	±20%	116-1001-228	
C211	Mylar	0.1μF	50WV	±10%	116-5149-104	
C212	Mylar	0.1μF	50WV	±10%	116-5149-104	
C213	Mylar	0.1μF	50WV	±10%	116-5149-104	
C214	Aluminum	100μF	10WV	±20%	116-5182-107	
C301	Aluminum	100μF	10WV	±20%	116-5182-107	
C302	Semi-Conductive	0.047μF	25WV	±10%	116-5161-473	
C303	Aluminum	220μF	10WV	±20%	116-5182-227	
C304	Aluminum	100μF	10WV	±20%	116-5182-107	
C305	Aluminum	47μF	16WV	±20%	116-5183-476	
C306	Mylar	0.001μF	50WV	±10%	116-5149-102	

OTHERS			
Ref. No.	**Description**	**MFR's Part Number**	**Remarks**
RY301	Relay FBR311D012Y	145-5005-002	
L301	Choke Coil 0.2mH 4A	118-5010-001	
PL301	Lamp 8V 60mA	139-1007-001	
SK101	Output Cord Din 2 Pin (L)	160-5395-003	
SK201	Output Cord Din 2 Pin (R)	160-5396-003	
PG101	Input Cord Din 2 Pin (L)	160-5397-001	
PG201	Input Cord Din 2 Pin (R)	160-5398-001	
PG301	Din 8 Pin Plug Assy	160-5405-001	
	Power Supply Cord with Fuse Holder (7A)	160-5400-007	
	Ground Cord	160-5401-001	
	Remote Control Cord	160-5402-001	

EXPLODED VIEW

Ref. No.	Description	MFR's Part Number	Remarks
1	Cover, Top	114-5302-001	
2	Cover, Bottom	114-5303-001	
3	Frame, Front	214-5304-001	
4	Frame, Rear	114-1014-001	
5	Bezel	224-5608-001	
6	Plate, Ornamental	124-5609-001	
7	Back Screen	125-5941-001	
8	Holder, IC	125-1007-001	
9	Plate for Earth	125-5653-001	
10	Tub	125-5783-001	
11	Bracket, Mounting	125-1008-002	
12	Heat Sink (L)	226-5057-010	
13	Heat Sink (R)	226-5057-020	
14	Insulator	131-5180-001	
15	Cushion	131-1018-001	
16	Amp. P.C. Board Ass'y	189-5957	
17	Lamp P.C. Board Ass'y	189-5958	
18	Output Cord DIN 2P (L) (SK101)	160-5395-003	
19	Output Cord DIN 2P (R) (SK201)	160-5396-003	
20	Input Cord DIN 2P (L) (PG101)	160-5397-001	
21	Input Cord DIN 2P (R) (PG201)	160-5398-001	
22	DIN 8P Plug Ass'y (PG301)	160-5405-001	
23	Power Supply Cord with Fuse Holder (7A)	160-5400-007	
24	Ground Cord	160-5401-001	
25	Remote Control Cord	160-5402-001	
26	Clamp, Cord 3305 (5/16)	160-5011-005	
27	Clamp, 3304 (1/4)	160-5001-002	
F1	Screw, + PMS M2.6x5 S)UC	129-2605-000-1	
	Screw, + PMS M2.6x5 S)UC	129-2605-000-1	
F2	Screw + PMSS M3x6 S)UC	129-3006-009-1	
F3	Screw, + PMSS M2x4 S)UC	129-2004-009-1	
F4	Screw, + PTS M2.6x5 S)UC	129-2605-001-1	
F5	Screw, + BMS M2.6x5 S)UC	129-2605-040-1	
F6	Screw, + BMS M3x6 S)UC	129-3006-040-1	
F7	Screw, + BMS M3x10 S)UC	129-3010-040-1	
F8	Washer, Flat ϕ3.2x10x0.8t S)UC	129-3008-501-1	
F9	Washer, Flat ϕ3.5x10x0.8t S)UC	129-3008-501-1	